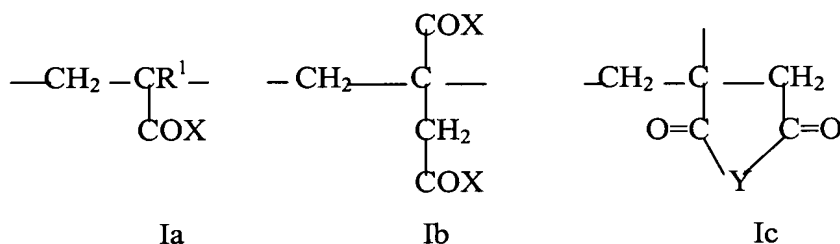


AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

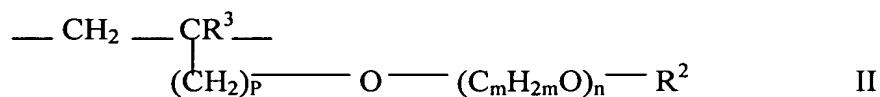
1. (Currently Amended) A fluidising admixture for use with sprayable cementitious compositions, the admixture consisting of:

- (1) 2-phosphonobutane-1,2,4-tricarboxylic acid;
- (2) optionally, citric acid; and
- (3) at least one polymer derived from ethylenically-unsaturated mono-or dicarboxylic acids, and characterised in that the polymer consists of:
 - a) 51-95 mole % of moieties of formula 1a and/or 1b and/or 1c



wherein R^1 = hydrogen or a C_{1-20} aliphatic hydrocarbon residue;
 $X = O_a M$, $-O-(C_m H_{2m} O)_n - R^2$, $-NH-(C_m H_{2m} O)_n - R^2$,
 M = hydrogen, a mono-or divalent metal cation, an ammonium ion or an organic amine residue;
 $a = 0.5$ or 1 ;
 R^2 = hydrogen, C_{1-20} aliphatic hydrocarbon, C_{5-8} cycloaliphatic hydrocarbon or optionally substituted C_{6-14} aryl residue;
 $Y = O$, NR^2 ;
 $m = 2-4$; and
 $n = 0-200$;

b) 1-48.9 mole% of moieties of the general formula II

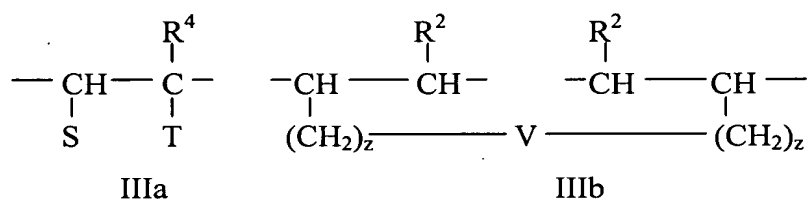


wherein R^3 = hydrogen or C_{1-5} aliphatic hydrocarbon;

$p = 0-3$; and

R^2 has the meaning given previously;

c) 0.1-5 mole % of moieties of Formulae IIIa or IIIb



wherein $\text{S} = \text{H}, -\text{COO}_a\text{M}, -\text{COOR}^5$

$\text{T} = \text{U}^1 - (\text{CH}-\text{CH}_2-\text{O})_x - (\text{CH}_2-\text{CH}_2\text{O})_y \text{R}^6$
 $\quad |$
 $\quad \text{CH}^3$

$-\text{W}-\text{R}^7$

$-\text{CO}-[\text{NH}-(\text{CH}_2)_3]_s-\text{W}-\text{R}^7$

$-\text{CO}-\text{O}-(\text{CH}_2)_z-\text{W}-\text{R}^7$

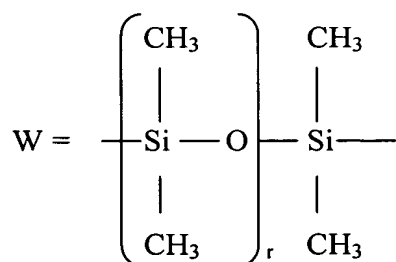
$-(\text{CH}_2)_z-\text{V}-(\text{CH}_2)_z-\text{CH}=\text{CH}-\text{R}^2$

$= -\text{COOR}^5$ when S is $-\text{COOR}^5$ or COO_aM

$\text{U}^1 = -\text{CO}-\text{NH}-, -\text{O}-, -\text{CH}_2\text{O}-$

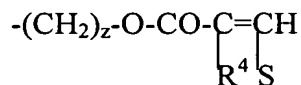
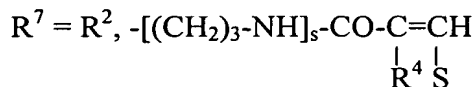
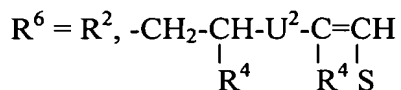
$\text{U}^2 = -\text{NH}-\text{CO}-, -\text{O}-, -\text{OCH}_2-$

$\text{V} = -\text{O}-\text{CO}-\text{C}_6\text{H}_4-\text{CO}-\text{O}-$ or $-\text{W}-$



$\text{R}^4 = \text{H}, \text{CH}_3$

R^5 = a C_{3-20} aliphatic hydrocarbon residue, a C_5-C_8 cycloaliphatic hydrocarbon residue or a C_6-14 aryl residue;



wherein

$r = 2-100$

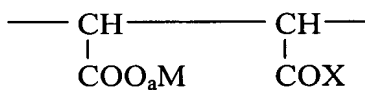
$s = 1, 2$

$z = 0-4$

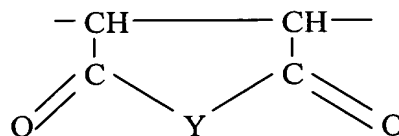
$x = 1-150$

$y = 0-15$; and

d) 0-47.9 mole % of moieties of the general formula IVa and / or IV b:



IVa



IVb

wherein a, M, X and Y have the ~~significances hereinabove defined~~ meanings defined above.

2. (Currently Amended) A fluidising admixture according to claim 1, in which:

a) the moiety is according to formula Ia;

R^1, R^2 are independently H or CH_3 ;

$X = O_a M, -O-(C_m H_{2m} O)_n - R^2$

$M = H$ or a mono-or divalent metal cation;

$a = 1$;

$Y = O, NR^2$;

$m = 2-3$; and

- n= 20-150;
 b) R^2, R^3 are independently H or CH_3 ; and
 $p = 0-1$; and

- c) the moiety is according to formula IIIa;

$S = H, -COO_aM, -COOR^5$

$T = U^1-(CH-CH_2-O)_x-(CH_2-CH_2O)_yR^6$
 $\quad \quad \quad |$
 $\quad \quad \quad CH^3$

$-CO-[NH-(CH_2)_3]_s-W-R^7$

$-CO-O-(CH_2)_z-W-R^7$

R^4, R^5 are independently H, CH_3 ;

$R^6 = R^2, -CH_2-\underset{\substack{| \\ R^4}}{CH}-U^2-\underset{\substack{| \\ R^4}}{C}=\underset{\substack{| \\ S}}{CH}$

$R^7 = R^2, -[(CH_2)_3-NH]_s-CO-\underset{\substack{| \\ R^4}}{C}=\underset{\substack{| \\ S}}{CH}$

$-(CH_2)_z-O-CO-\underset{\substack{| \\ R^4}}{C}=\underset{\substack{| \\ S}}{CH}$

wherein

$U^1 = -CO-NH-, -O-, -CH_2-O-$

$U^2 = -NH-CO-, -O-, -OCH_2-$

$U^1 = -CO-NH-, -O-, -CH_2-O-$

$U^2 = -NH-CO-, -O-, -OCH_2-$

$x = 20-50$;

$y = 1-10$; and

$z = 0-2$.

3. (Currently Amended) A fluidising admixture according to claim 2, in which:

- a) the moiety is according to formula Ia;

$R^1 = H$;

$R^2 = CH_3$;

$X = O_a M$;

$M =$ a mono-or divalent metal cation;

$Y = O, NR^2$;

$m = 2$; and

$$n = 25-50;$$

- b) $R^2, R^3 = H$; and
 $p = 0$; and

- c) the moiety is according to formula IIIa;

$$S = H, -COO_aM;$$

$$T = U^1 - (\underset{\underset{\text{CH}^3}{|}}{\text{CH}} - \text{CH}_2 - \text{O})_x - (\text{CH}_2 - \text{CH}_2\text{O})_y R^6$$

$$-\text{CO}-\text{O}-(\text{CH}_2)_z-\text{W}-R^7$$

$$R^4, R^5 = H;$$

$$R^6 = R^2, -\text{CH}_2-\underset{\underset{R^4}{|}}{\text{CH}}-U^2-\underset{\underset{R^4}{|}}{\underset{\underset{S}{|}}{\text{C}}}=\text{CH}$$

$$R^7 = R^2, -[(\text{CH}_2)_3-\text{NH}]_s-\text{CO}-\underset{\underset{R^4}{|}}{\underset{\underset{S}{|}}{\text{C}}}=\text{CH}$$

$$-(\text{CH}_2)_z-\text{O}-\text{CO}-\underset{\underset{R^4}{|}}{\underset{\underset{S}{|}}{\text{C}}}=\text{CH}$$

wherein

$$U^1 = -\text{CO}-\text{NH}-;$$

$$U^2 = -\text{NH}-\text{CO}-, -\text{O}-, -\text{OCH}_2-$$

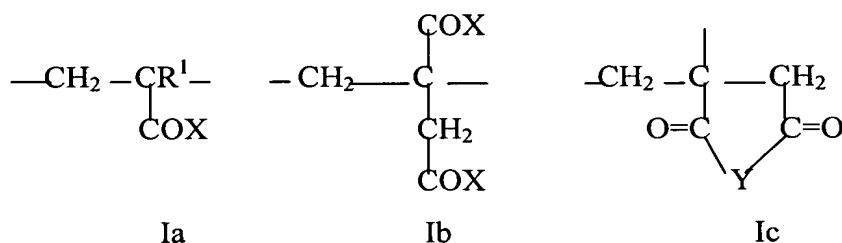
$$x = 20-50;$$

$$y = 5-10; \text{ and}$$

$$z = 1-2.$$

4. (Currently Amended) A method of imparting flow to a cementitious composition, comprising the addition thereto of [[an]] ~~the admixture according to any one of claims~~ of claim 1 ~~[[3]]~~.
5. (Currently Amended) A method of spraying a cementitious composition comprising [[by]] preparing a cementitious mix and conveying the mix to a spray nozzle, there being added to the mix at preparation [[an]] ~~the admixture according to~~ of claim 1.
6. (New) The admixture of claim 1 wherein the polymer has a weight-average molecular weight of from about 5,000 to about 50,000.

7. (New) The admixture of claim 1 wherein the polymer has a weight-average molecular weight of from about 10,000 to about 40,000.
8. (New) The admixture of claim 1 wherein the proportions of the solids of the three components are:
 Component 1 - about 1 % to about 40%;
 Component 2 - 0 to about 40%; and
 Component 3 - about 5 % to about 60%.
9. (New) The method of claim 4 wherein the admixture is added at a rate of from about 0.2 % to about 2 % by weight solids of cement.
10. (New) A fluidising admixture for use with sprayable cementitious compositions, the admixture comprising:
 - (1) 2-phosphonobutane-1,2,4-tricarboxylic acid;
 - (2) optionally, citric acid monohydrate; and
 - (3) at least one polymer derived from ethylenically-unsaturated mono-or dicarboxylic acids, and characterised in that the polymer comprises:
 - a) 51-95 mole % of moieties of formula 1a and/or 1b and/or 1c



wherein R^1 = hydrogen or a C_{1-20} aliphatic hydrocarbon residue;
 $X = O_a M$, $-O-(C_m H_{2m} O)_n - R^2$, $-NH-(C_m H_{2m} O)_n - R^2$,
 M = hydrogen, a mono- or divalent metal cation, an ammonium ion or an organic amine residue;

a=0.5 or 1;

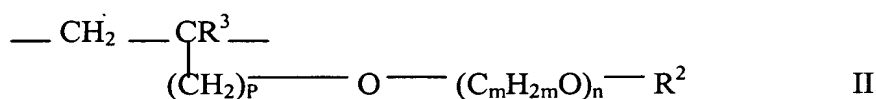
R² = hydrogen, C₁₋₂₀ aliphatic hydrocarbon, C₅₋₈ cycloaliphatic hydrocarbon or optionally substituted C₆₋₁₄ aryl residue;

Y= O, NR²;

m= 2-4; and

n= 0-200;

b) 1-48.9 mole% of moieties of the general formula II

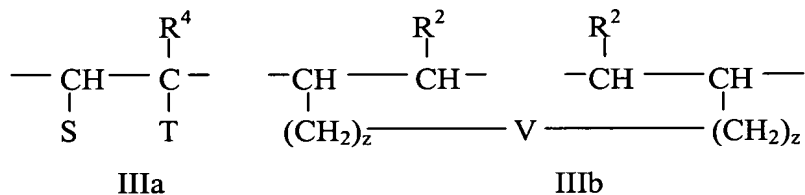


wherein R³ = hydrogen or C₁₋₅ aliphatic hydrocarbon;

p = 0-3; and

R² has the meaning given previously;

c) 0.1-5 mole % of moieties of Formulae IIIa or IIIb



wherein S = H, -COO_aM, - COOR⁵

T = U¹ - (CH-CH₂-O)_x - (CH₂-CH₂O)_y R⁶
 $\begin{array}{c} | \\ \text{CH}^3 \end{array}$

-W-R⁷

-CO-[NH-(CH₂)₃]_s-W-R⁷

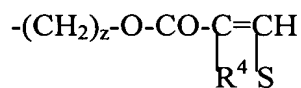
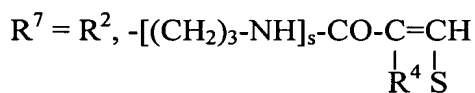
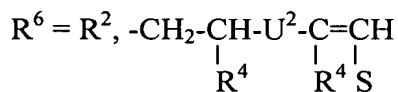
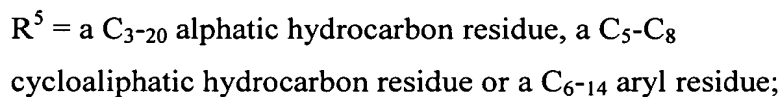
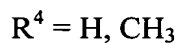
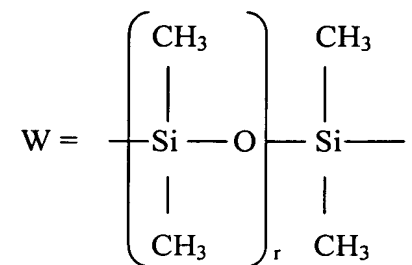
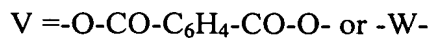
-CO-O-(CH₂)_z-W-R⁷

-(CH₂)_z-V-(CH₂)_z-CH=CH-R²

= - COOR⁵ when S is - COOR⁵ or COO_a M

U¹ = -CO-NH-, -O-, - CH₂ O-

U²= - NH-CO-, -O-, -OCH₂-



wherein

$$r = 2-100$$

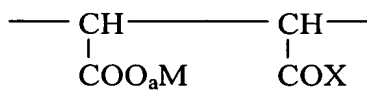
$$s = 1, 2$$

$$z = 0-4$$

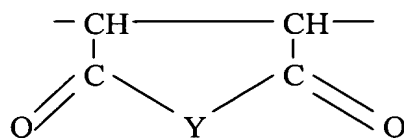
$$x = 1-150$$

$$y = 0-15; \text{ and}$$

d) 0-47.9 mole % of moieties of the general formula IVa and / or IV b:



IVa



IVb

wherein a, M, X and Y have the meanings defined above.

11. (New) A fluidising admixture according to claim 10, in which:

a) the moiety is according to formula Ia;

R^1, R^2 are independently H or CH_3 ;

$X = O_a M, -O-(C_m H_{2m} O)_n - R^2$

$M = H$ or a mono-or divalent metal cation;

$a = 1$;

$Y = O, NR^2$;

$m = 2-3$; and

$n = 20-150$;

b) R^2, R^3 are independently H or CH_3 ; and

$p = 0-1$; and

c) the moiety is according to formula IIIa;

$S = H, -COO_a M, -COOR^5$

$T = U^1 - \underset{\text{CH}^3}{\underset{|}{(CH-CH_2-O)_x}} - (CH_2-CH_2O)_y R^6$

$-CO-[NH-(CH_2)_3]_s - W - R^7$

$-CO-O-(CH_2)_z - W - R^7$

R^4, R^5 are independently H, CH_3 ;

$R^6 = R^2, -CH_2-\underset{\text{R}^4}{\underset{|}{CH}}-U^2-\underset{\text{R}^4}{\underset{|}{C}}=\underset{\text{S}}{\underset{|}{CH}}$

$R^7 = R^2, -[(CH_2)_3-NH]_s - CO-\underset{\text{R}^4}{\underset{|}{C}}=\underset{\text{S}}{\underset{|}{CH}}$

$-(CH_2)_z - O - CO - \underset{\text{R}^4}{\underset{|}{C}}=\underset{\text{S}}{\underset{|}{CH}}$

wherein

$U^1 = -CO-NH-, -O-, -CH_2 O-$

$U^2 = -NH-CO-, -O-, -OCH_2-$

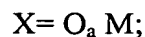
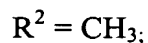
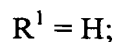
$x = 20-50$;

$y = 1-10$; and

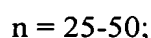
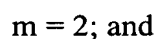
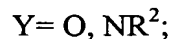
$z = 0-2$.

12. (New) A fluidising admixture according to claim 11, in which:

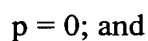
a) the moiety is according to formula Ia;



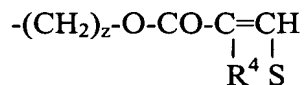
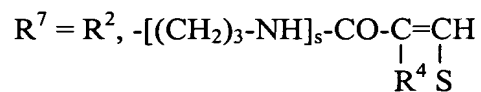
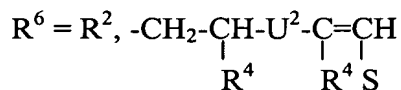
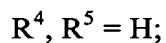
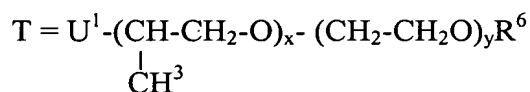
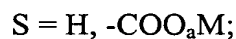
M = a mono-or divalent metal cation;



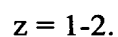
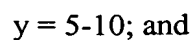
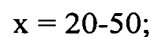
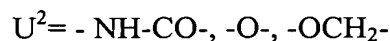
b) $R^2, R^3 = H;$ and



c) the moiety is according to formula IIIa;



wherein



13. (New) A method of imparting flow to a cementitious composition, comprising the addition thereto of the admixture of claim 10.

14. (New) A method of spraying a cementitious composition comprising preparing a cementitious mix and conveying the mix to a spray nozzle, there being added to the mix at preparation the admixture of claim 10.
15. (New) The admixture of claim 10 wherein the polymer has a weight-average molecular weight of from about 5,000 to about 50,000.
16. (New) The admixture of claim 10 wherein the polymer has a weight-average molecular weight of from about 10,000 to about 40,000.
17. (New) The admixture of claim 10 wherein the proportions of the solids of the three components are:
Component 1 - about 1% to about 40%;
Component 2 - 0 to about 40%; and
Component 3 - about 5% to about 60%.
18. (New) The method of claim 13 wherein the admixture is added at a rate of from about 0.2% to about 2% by weight solids of cement.